

I claim:

1. An assembly mountable on the boom of a machine for grappling objects, comprising:

a dipper stick pivotally connectable to said boom;

a tool connected to said dipper stick, pivotal about a first axis relative to said dipper stick;

means operatively interconnecting said dipper stick and said tool for pivoting said tool about said first axis;

an arm member having a first section connected to an underside of said dipper stick for pivotal movement about a second axis and a second section connectable to said first arm section for pivotal movement relative to said first arm section about a third axis, one of said arm sections having a curved bearing surface with a notch therein and the other of said arm sections having a biased roller engaging said bearing section whereby said roller may be received in said notch to displaceably position said second arm section relative to said first arm section, and ride on portions of said curved surface when a force in a certain direction is applied to said second arm section; and

a chain connected at one end to said underside of said dipper stick and connected at another end thereof to said arm member,

whereby when said assembly is operated in a grappling mode, objects may be grappled by maneuvering said chain in an extended condition against a side of an object and then pivoting said tool to seize said object between said chain and said tool.

2. An assembly according to claim 1 wherein said second arm section is provided with a pad on the free end thereof which may engage an object being grappled.

3. An assembly according to claim 1 wherein said arm member is provided with a bumper engageable with said underside of said dipper stick.

4. An assembly according to claim 1 wherein when said tool comprises a bucket which may be curled about said second axis toward the underside of said dipper stick, and said arm member has a length sufficient to be received within a material receiving opening of said bucket.

5. An assembly according to claim 1 wherein said bearing surface has an undulating configuration.

6. An assembly according to claim 1 wherein said notch is disposed on a longitudinal centerline of one of said arm sections, and the axis of rotation of said roller lies on the longitudinal centerline of the other of said arm sections.

7. An assembly according to claim 6 wherein said bearing surface has an undulating configuration.

8. An assembly according to claim 1 wherein said notch is disposed on the longitudinal centerline of said first arm member, and the axis of rotation of said roller is disposed on the longitudinal centerline of said second arm section.

9. An assembly according to claim 8 wherein said bearing surface has an undulating configuration.

10. An assembly according to claim 8 wherein said roller is biased along a line of travel aligned with the longitudinal centerline of said second arm section.

11. An assembly according to claim 1 wherein said portions of said bearing surface disposed on sides of said notch are radially displaced relative to said third axis.

12. An assembly according to claim 1 wherein said portions of said bearing surface disposed on sides of said notch have increasing radii of curvature from said notch laterally, relative to said third axis.

13. An assembly mountable on a dipper stick of a machine, having a tool pivotally connected thereto and means operatively interconnecting said dipper stick and said tool for pivoting said tool relative to said dipper stick about a first axis, cooperable with said tool when mounted on said dipper stick for grappling objects comprising:

an arm member having a first section connectable to an underside of said dipper stick for pivotal movement about a second axis and a second section connectable to said first section for pivotal movement relative to said first arm section about a third axis, one of said arm members having a curved bearing surface with a notch therein and the other of said arm sections having a roller biased against said bearing surface whereby said roller may be received in said notch to displaceably position said second arm section relative to said first arm section in a certain relationship and ride on portions of said curved bearing surface when a force in a certain direction is applied to said second arm section causing said roller to ride out of said recess against the biasing force acting thereon; and

a chain connected at one end to said second arm section and connectable at an opposite end thereof to said dipper stick.

14. An assembly according to claim 13 wherein said second arm section is provided with a pad on a free end thereon which may engage an object being grappled.

15. An assembly according to claim 13 wherein said arm member is provided with a bumper engageable with said underside of said dipper stick.

16. An assembly according to claim 13 wherein said tool comprises a bucket which may be curled about said second axis toward the underside of said dipper stick, and said arm member has a length sufficient to be received within a material receiving opening of said bucket.

17. An assembly according to claim 13 wherein said bearing surface has an undulating configuration.

18. An assembly according to claim 13 wherein said notch is disposed on a longitudinal centerline of one of said arm sections, and the axis of rotation of said roller lies on a longitudinal centerline of the other of said arm sections.

19. An assembly according to claim 18 wherein said bearing surface has an undulating configuration.

20. An assembly according to claim 13 wherein said notch is disposed on the longitudinal centerline of said first arm section, and the axis of rotation of said roller is disposed on the longitudinal centerline of said second arm member.

21. An assembly according to claim 20 wherein said bearing surface has an undulating configuration.

22. An assembly according to claim 20 wherein said roller is biased along a line of travel aligned with the longitudinal centerline of said second arm section.

23. An assembly according to claim 13 wherein said portions of said bearing surface disposed on sides of said notch are radially displaced relative to said third axis.

24. An assembly according to claim 13 wherein said portions of said bearing surface disposed on sides of said notch have increasing radii of curvature from said notch laterally, relative to said third axis.

25. An assembly according to claim 13 wherein said biasing of said roller is provided by a compressible elastomer disposed between one of said arm members and said roller.

26. An assembly according to claim 13 wherein said chain is connectable to said second arm section at selected points along its length to vary the length thereof.